

Closed loop hall effect voltage sensor

HCB-V-50V~25KV(10mA)

Used to measure DC, AC, pulse voltage.... The measured voltage on the primary side is electrically isolated from the output current (output voltage) on the secondary side

Feature:

Test frequency: 0~20KHz

Response time: 20~200uS

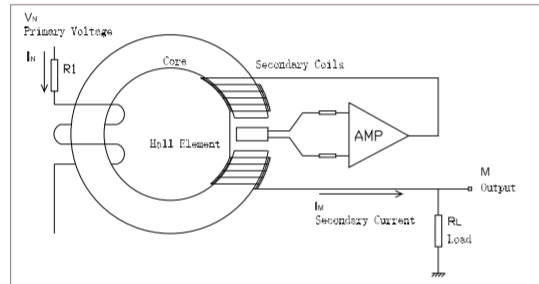
Linearity: 0.1%

No insertion loss measured

Measure AC, DC and pulse current

The primary voltage is highly isolated from the secondary output signal

Closed-loop Hall magnetic compensation principle manufacturing



Working principle:

The principle of Hall magnetic compensation is that the measured current V_N flows through the magnetic field generated by the conductor, and the compensation current I_M controlled by the Hall element output signal flows through the secondary coil to compensate for the magnetic field. When the primary and secondary magnetic fields reach balance, the compensation current I_M can accurately reflect the primary voltage value.

Note

The standard output of the models given in the table is 5V voltage. If 0-25mA current output is selected, the models listed in the table are followed by the symbol "A".

HCB-V Series hall effect voltage sensor

Part No	I_N (mA)	I_s (mA)	I_M (mA)	Accuracy $T_a=25^\circ\text{C}$	Turns ratio	Load Resistance		I_{off} (mA)	V_c (V)	I_c (mA)	V_i (KV)	T_a ($^\circ\text{C}$)	W (g)	Fig. No.
						Ω_{min}	Ω_{max}							
HCB-V-20L	100	± 120	5V	1.0%	200:1000	...	...	$\pm 100\text{mV}$	$\pm 12\sim 15$	$10+I_M$	2.5	$-25\sim +70$	18	10
HCB-V-25P	10	± 14	25	1.0%	2500:1000	30	350	± 0.2	$\pm 12\sim 15$	$10+I_M$	2.5	$-25\sim +70$	24	1
HCB-V-50P	10	± 20	50	1.0%	5000:1000	0	350	± 0.3	$\pm 12\sim 15$	$10+I_M$	3	$-25\sim +70$	90	2
HCB-V-100	10	± 20	50	0.6%	10000:2000	0	150	± 0.3	$\pm 12\sim 15$	$10+I_M$	6	$-25\sim +70$	360	6
HCB-V-200	20	± 40	100	0.5%	10000:2000	12	170	± 0.3	$\pm 15\sim 24$	$30+I_M$	10	$-25\sim +70$	1600	12

HCB-V Series hall effect voltage sensor (primary contion resistance R1)

Part No	I_N (mA)	I_s (mA)	I_M (mA)	Accuracy $T_a=25^\circ\text{C}$	Turns ratio	Load Resistance		I_{off} (mA)	V_c (V)	I_c (mA)	V_i (KV)	T_a ($^\circ\text{C}$)	W (g)	Fig. No.
						Ω_{min}	Ω_{max}							
HCB-V-25P/30	30	± 45	5V(25mA)	1.0%	2500:1000	$>10\text{K}$	...	$\pm 30\text{mV}$	$\pm 12\sim 15$	$10+I_M$	2.5	$-25\sim +70$	50	3
HCB-V-25P/50	50	± 75				(0 Ω)	(350 Ω)	($\pm 0.2\text{mA}$)						
HCB-V-25P/100	100	± 150												
HCB-V-25P/300	300	± 450	5V(25mA)	1.0%	2500:1000	$>10\text{K}$	...	$\pm 30\text{mV}$	$\pm 12\sim 15$	$10+I_M$	2.5	$-25\sim +70$	50	3
HCB-V-25P/500	500	± 750			(5000:1000)	(0 Ω)	(350 Ω)	($\pm 0.2\text{mA}$)						
HCB-V-50VD	50	± 75	5V	1.0%	2500:1000	$>10\text{K}$	...	$\pm 30\text{mV}$	$\pm 12\sim 15$	35	2.5	$-25\sim +70$	90	11
HCB-V-100VD	100	± 150												
HCB-V-300VD	300	± 450												
HCB-V-600VD	600	± 900												
HCB-V-50P/200	200	± 300	5V(25mA)	0.8%	5000:1000	$>10\text{K}$	...	$\pm 30\text{mV}$	$\pm 12\sim 15$	$10+I_M$	3	$-25\sim +70$	110	4
HCB-V-50P/400	400	± 600				(0 Ω)	(350 Ω)	($\pm 0.3\text{mA}$)						
HCB-V-50P/600	600	± 900												
HCB-V-50P/800	800	± 1200												
HCB-V-50P/1000	1000	± 1500			(10000:1000)									
HCB-V-100/100	100	± 150	5V(25mA)	0.5%	10000:2000	$>10\text{K}$	...	$\pm 30\text{mV}$	$\pm 12\sim 15$	$10+I_M$	6	$-25\sim +70$	360	8(6)
HCB-V-100/300	300	± 450				(0 Ω)	(150 Ω)	($\pm 0.3\text{mA}$)						
HCB-V-100/500	500	± 750												
HCB-V-100/600	600	± 900	5V(25mA)	0.5%	20000:2000	$>10\text{K}$	...	$\pm 30\text{mV}$	$\pm 12\sim 15$	$10+I_M$	6	$-25\sim +70$	650	9(5)
HCB-V-100/800	800	± 1200				(0 Ω)	(150 Ω)	($\pm 0.3\text{mA}$)						
HCB-V-100/1000	1000	± 1500												
HCB-V-100/2000	2000	± 3000												
HCB-V-100/2500	2500	± 3750	5V(25mA)	0.5%	30000:2000	$>10\text{K}$	...	$\pm 30\text{mV}$	$\pm 12\sim 15$	$10+I_M$	6	$-25\sim +70$	650	9(5)
HCB-V-100/3000	3000	± 4500				(0 Ω)	(150 Ω)	($\pm 0.3\text{mA}$)						
HCB-V-100/4000	4000	± 6000												
HCB-V-1KV	1000	± 1500	80mA	0.5%	20000:2000	30	125	± 0.3	$\pm 15\sim 24$	$80+I_M$	10	$-25\sim +70$	2000	12
HCB-V-3KV	3000	± 4500			80000:2000									
HCB-V-5KV	5000	± 7500			160000:2000									
HCB-V-6KV	6000	± 9000	80mA	0.5%	160000:2000	30	125	± 0.3	$\pm 15\sim 24$	$80+I_M$	15	$-25\sim +70$	2500	7
HCB-V-9KV	9000	± 13500												
HCB-V-10KV	10000	± 15000	80mA	0.5%	160000:2000	30	125	± 0.3	$\pm 15\sim 24$	$80+I_M$	20	$-25\sim +70$	2500	7
HCB-V-12KV	12000	± 18000												
HCB-V-10KV1	10000	± 15000	80mA	1.0%	160000:2000	10	80	± 0.3	$\pm 15\sim 24$	$80+I_M$	35	$-25\sim +70$	17500	13
HCB-V-15KV1	15000	± 22500												



Fig. 1

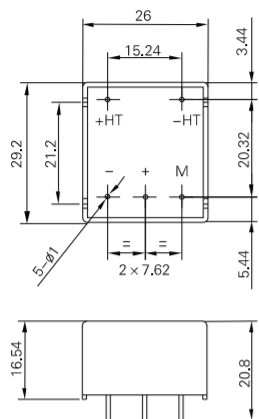


Fig. 2

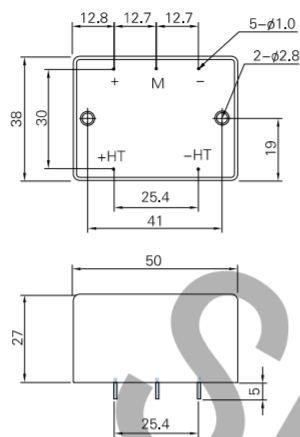


Fig. 3

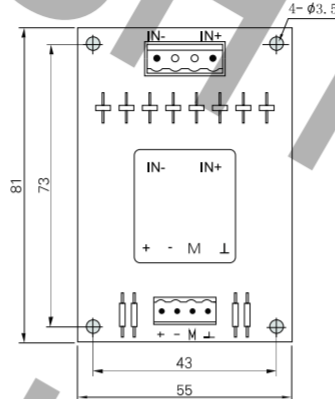


Fig. 4

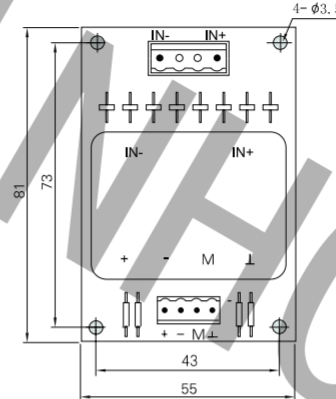


Fig. 5

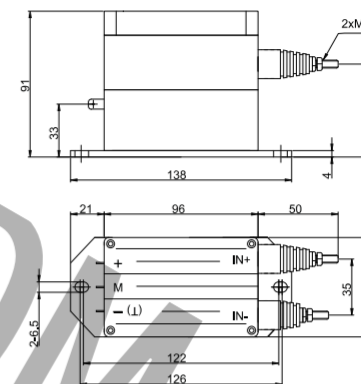


Fig. 6

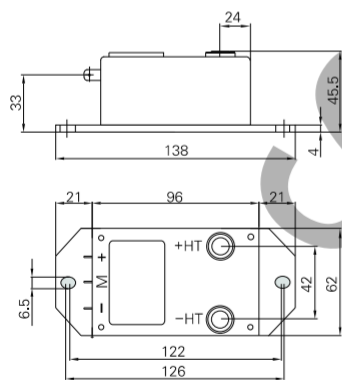


Fig. 7

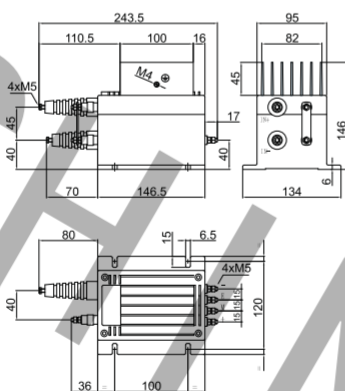


Fig. 8

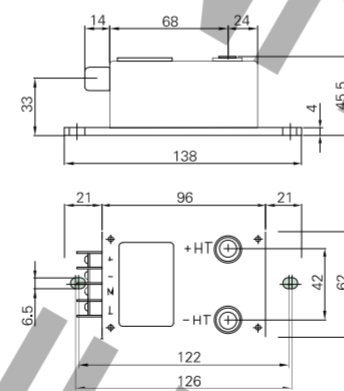


Fig. 9

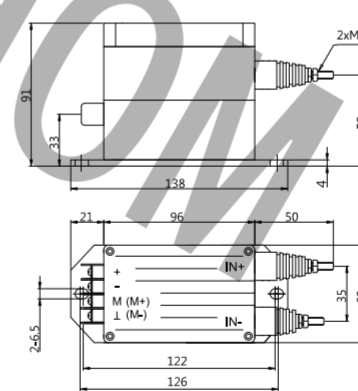


Fig. 10

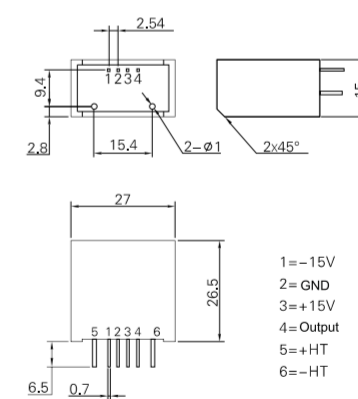


Fig. 11

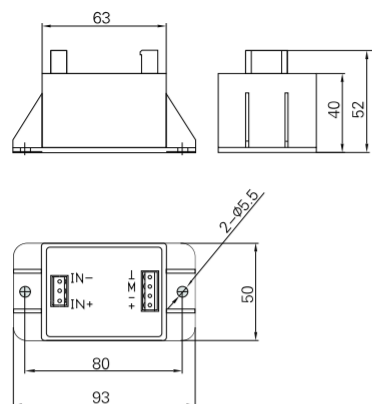


Fig. 12

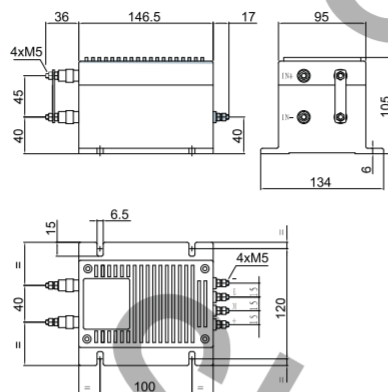
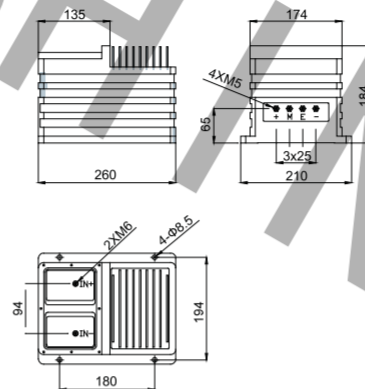


Fig. 13



M	Output
M+	Output+
M-	Output-
NC	NO
IN	Input
IN+(+HT)	Input+
IN-(-HT)	Input-
+VN	Input voltage+
-VN	Input voltage-

I_N	Nominal current	V_{off}	Offset voltage
V_N	Nominal voltage	T_d	Temperature drift
I_D	Measuring range	L	Linearity
R_M	Measuring resistance	T_r	Response time
I_M	Output current	f	Frequency bandwidth
V_M	Output voltage	T_a	Operating temperature
K_N	Turns ratio	T_s	Storage temperature
X	Accuracy	I_c	Current consumption
V_c	Supply voltage	R_s	Secondary resistance
V_i	Isolation voltage	R_N	Primary resistance
I_{off}	Offset current	W	Weight